



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,154	04/01/2005	Yves Auffret	3340.228US01	8362

24113 7590 09/19/2006

PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A.
4800 IDS CENTER
80 SOUTH 8TH STREET
MINNEAPOLIS, MN 55402-2100

EXAMINER

HUGHES, SCOTT A

ART UNIT PAPER NUMBER

3663

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/530,154

Applicant(s)

AUFFRET ET AL.

Examiner

Scott A. Hughes

Art Unit

3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/1/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4 and 6 recite the limitation "said low-frequency acoustic signal." There is insufficient antecedent basis for this limitation in the claims, as claim 1 only referred to an acoustic signal and not a low frequency acoustic signal.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Avedik (4138658).

With regard to claim 1, Avedik discloses an ocean bottom station designed to perform in situ measurements (abstract). Avedik discloses a support structure 1,2,3,4,6 (Figs. 1,5) with positive buoyancy with which there is associated at least one detachable ballast 5 to convey the support structure to the bottom of the ocean for the period of a

measurement session (Column 3, Lines 15-25; Column 5, Lines 1-26). Avedik discloses that the support structure includes at least one hydrophone (Column 3, lines 54-60), one data acquisition unit to record measurement data (Column 3, Lines 38-54), and one device for releasing of the detachable ballast (Column 3, lines 25-55; Column 5, Lines 1-27). Avedik discloses that the data acquisition unit is capable of controlling the releasing device in response to an acoustic release command received by the hydrophone (Column 5, Lines 1-27).

Claims 1 and 4-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Wooding (IEEE 1997).

With regard to claim 1, Wooding discloses an ocean bottom station designed to perform in situ measurements (abstract). Wooding discloses a support structure with positive buoyancy (1460; Introduction to 1462, 1st paragraph) with which there is associated at least one detachable ballast (anchor) to convey the support structure to the bottom of the ocean for the period of a measurement session (1461 to 1462, 1st paragraph). Wooding discloses that the support structure includes at least one hydrophone (Figs. 2-6), one data acquisition unit to record measurement data (1462), and one device for releasing of the detachable ballast (Figs. 2-3) (1461-1462). Wooding discloses that the data acquisition unit is capable of controlling the releasing device in response to an acoustic release command received by the hydrophone (1461-1462) (Figs. 1-3).

With regard to claim 4, as best understood by the examiner, Wooding discloses that the low frequency acoustic signal comprises a plurality of consecutive elementary signals of a first type and of a second type representing a sequence of bits individual to the seismic station, the elementary signals of the first type and second type representing bits with a value of 0 and 1, or vice versa (1461, 1st column). Wooding discloses using Frequency Shift Keying, which is a modulation that uses 0 and 1 to represent different waveforms.

With regard to claim 5, Wooding discloses that the elementary signals of the first type are modulated in frequency from frequency f_1 to f_2 and that the second type are modulated from f_2 to f_1 (1461, 1st column). The frequency modulation of elementary signals (1 and 0) is a part of Frequency Shift Keying disclosed by Wooding.

With regard to claim 6, Wooding discloses that the data acquisition unit comprises means (Figs. 1-3) to sample the received signal and detection means (Figs. 1-3) to detect the presence of the low-frequency signal in the sampled signal by digital correlation and deliver a release command to the releasing mechanism if the low-frequency signal is detected, whereby the release command is detected by the hydrophone (Figs. 1-3) (1461, 2nd paragraph to 1462).

With regard to claim 7, Wooding discloses the support structure of the station being constituted by a spherical glass enclosure placed inside a protection shell, said spherical enclosure being resistant to the hydrostatic pressure present at depths that may go up to several thousands of meters (1460, 2nd Column, to 1461) (Figs. 1-3).

With regard to claim 8, Wooding discloses a signal light placed inside the spherical enclosure to produce light when the support structure is raised to the surface after the releasing of the ballast, the protection shell being given apertures to let through the light produced by the signal light (1461, 2nd Column to 1462).

With regard to claim 9, Wooding discloses the ballast being attached to the support structure by elastic cords that are fixed, by a first end, to the ballast and by a second end, to a metal ring destructible by electrolysis (burn wire) (Figs. 2-3) (1461-1462).

With regard to claim 10, Wooding discloses the releasing mechanism comprising a switch controlled by the detection means of the data acquisition unit, said switch making current pass into the metal ring to destroy it when it receives a release command (Figs. 2-3) (1461-1462).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wooding as applied to claim 1 above and further in view of Baker (3820391).

With regard to claim 2, Wooding discloses the use of an acoustic release signal but does not disclose the specific frequency of the signal. Baker teaches using an

acoustic release to detach an ocean bottom instrument from a ballast weight or anchor (Column 3, Line 20 to Column 4, line 26). Baker teaches that the acoustic release signal is a low frequency acoustic signal modulated by a carrier signal having a frequency of 8-12 KHz (Column 3, Lines 25-40). It would have been obvious to modify Wooding to include using the 8-12KHz signal taught by Baker as the acoustic release signal in order to have a specific channel and frequency on which to listen and transpond.

With regard to claim 3, Wooding discloses using low frequency acoustic signals individualized to the station (1461, Column 1).

Conclusion

The cited prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A. Hughes whose telephone number is 571-272-6983. The examiner can normally be reached on M-F 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SAH



JACK KEITH
SUPERVISORY PATENT EXAMINER